As new technologies were transforming agriculture, the textile industry and mining, the Industrial Revolution also brought great changes in the field of transport. Rapid improvements in methods of transport greatly increased the availability of the raw materials needed to feed the new factories. They also allowed the rapid distribution of finished products to larger numbers of customers.

The importance of transport

In pre-industrial times, most goods were produced in small quantities by local producers to suit local needs. Industrialisation often meant that production moved away from local supplies and local markets. If a factory relied on water power, it had to be located next to a fast-flowing river. If it relied on steam power, proximity to coal and water supplies would be necessary. Factories were not producing just for the local market. They needed reliable means for transporting large quantities of raw materials to the factory and finished products away from the factory.

Canals

Transportation of goods by water had always been important in Britain. As an island nation, with a large number of navigable rivers, coastal and river shipping had been widely used for centuries. Most roads were still no more than muddy tracks, and horse-drawn carts could carry only small loads without getting bogged. Much larger loads could be transported on boats and barges, so rivers and canals were one answer to transporting the products of industrialisation. The first major canals of the Industrial Revolution were built to transport coal from the Lancashire coalfields to newly developing industrial cities. The Sankey Canal, built to carry coal to the city of Liverpool, was opened in 1757. The Bridgewater Canal, opened in 1761, carried coal to the growing city of Manchester. Alongside each canal was a towpath on which the horse towing a barge would walk (see spread 2.4). One horse could tow a barge carrying ten times the weight that could be loaded onto a cart.

‘Canal mania’

The canals were privately owned, so those who built them were able to charge a fee to anyone wishing to transport goods on them. This meant they paid for themselves within a few years, and were soon making a profit for their owners. Even with the fees paid to canal owners, transporting coal by canal was considerably cheaper than transporting by road. In a few years the price of coal in cities like Liverpool and Manchester had halved, making...
Canals became the major method of transporting goods to and from factories.

Steam power even more economical. The financial success of the Sankey and Bridgewater canals inspired many others to invest in canal building, and the next fifty years saw a period of ‘canal mania’. Between the 1760s and 1815 more than three thousand kilometres of canals were built across England to carry raw materials to factories and finished products away to markets.

**Roads**

Before the eighteenth century, every man in a village was expected to provide his labour free of charge for a certain number of days each year to maintain local roads. Major roads between large towns and cities received little maintenance and were often in a very poor state of repair. In the late seventeenth century, local magistrates were given the power to charge tolls on the use of main roads to provide funds for maintenance.

**Turnpike trusts**

From 1707 onwards groups of nominated trustees were given the power to collect these tolls and supervise road maintenance. These toll roads were known as turnpikes, and the groups of trustees called turnpike trusts. By the 1750s most of the main roads leading to London had been converted to turnpikes. By the 1830s more than 30,000 kilometres of turnpikes connected most of the major cities in England, Wales and Scotland. The quality of roads between major cities improved dramatically during this time, although the less important roads remained in a poor state. Eventually the railways took business away from the turnpikes, rendering them unprofitable, and road maintenance became the responsibility of local councils.

**Railways**

One of the biggest advances in transport came with the growth of the railways. This development came as a result of applying steam engines to tramway systems. In coal and iron ore mines, horses were used to draw wagons out of the mines along tracks. By the beginning of the nineteenth century steam technology had developed sufficiently for experiments to begin in the use of steam to drive moving vehicles. The first locomotives were used to haul trucks loaded with coal from mines. These inspired an engineer, George Stephenson, to promote the use of steam locomotives to haul a wide variety of goods, as well as passengers.

**The first successful railways**

The first public railway was opened in north-east England in 1825. Designed to carry coal from mines near Darlington to the port of Stockton, it employed George Stephenson’s ‘Locomotion No. 1’ locomotive. Before long, the owners expanded its activities to provide a passenger service with a regular timetable.

In the meantime, Stephenson and his son Robert were contracted to build a railway line between Manchester, the largest textile producing city, and Liverpool, a major port almost 60 kilometres away. The line, opened in 1830,
The first successful locomotive was known as Puffing Billy. Built in 1813, it was used to haul coal from the mines to a nearby port in Northumberland, in north-east England. Today it is located in the British National Science Museum in London. Its name was the inspiration for the steam train that today travels between Belgrave and Gembrook in the Dandenong Ranges east of Melbourne.

Stephenson’s Locomotion No.1 is now on display at the Darlington Railway Museum.

Steam locomotives were first used to haul trucks from coalmines, as shown in this nineteenth-century artwork.

Horses or Carriages attending her Majesty, or any of the Royal Family, or returning therefrom;
Horses or Carriages employed for the repairs of any Turnpike Roads, Highways or Bridges; Horses or Carriages employed in conveying Manure (save Lime) for improving Lands...

was constructed as a double track to allow trains to travel in both directions. It was designed to bring imported raw materials to Manchester and to return completed goods to Liverpool for export. Stephenson’s latest locomotive, the ‘Rocket’, was used to haul both goods and passengers between the two cities. The line was a huge financial success and became the model for a succession of railways that were soon constructed throughout Britain.

**Source 5** Extracts from the toll sign at Aberystwith Turnpike in Wales

**Source 6** Steam locomotives were first used to haul trucks from coalmines, as shown in this nineteenth-century artwork.

**Source 7** Stephenson’s Locomotion No.1 is now on display at the Darlington Railway Museum.
The railways expand

The growing demand for fast, efficient transport for both raw materials and the products of industrialisation led to a rapid expansion in railway construction. The following 20 years saw huge growth in the rail network. By 1852 there were more than 10 000 kilometres of track in Britain. Lines extended from London to the coast of Wales and north to Glasgow and Edinburgh in Scotland. The industrialised north and Midlands of England were serviced by extensive rail networks, transporting both passengers and a huge variety of goods.

EXPLANATION AND COMMUNICATION

1. Why were reliable methods of transport more important to the process of industrialisation than they had been in pre-industrial society?
2. What was the main purpose of the first canals built in Britain?
3. What do Sources 3 and 4 tell us about the advantages of canals over road transport?
4. What were turnpike trusts and how were they able to improve road transport?
5. When were the first railways opened in Britain and what was their main purpose?

ANALYSIS AND USE OF SOURCES

6. What advantages did the factory in Source 1 have in relation to transport?
7. Examine Source 5. Give three examples of groups of people who were exempt from tolls on the Aberystwyth Turnpike in Wales.
8. What does Source 8 tell us about the possible future use of rail transport, when compared with Sources 6 and 7?
9. Why is it appropriate to label ‘the march of progress’?

CHRONOLOGY, TERMS AND CONCEPTS

10. Draw up a timeline that shows the developments in road, canal and rail transport in Britain between 1700 and 1860.

PERSPECTIVES AND INTERPRETATIONS

11. Canals and railways were initially privately owned and designed to make a profit for their owners. Why might a factory owner be prepared to pay these additional transport costs?
12. While initially designed to carry goods, railways soon began carrying passengers. What effects might this have had on ordinary people and their families?

trustees a group appointed to manage property on behalf of another person or organisation

turnpike a type of toll road
turnpike trusts organisations established by Parliament with the power to collect tolls on particular roads and use the money to pay for maintenance of those roads